

IV. REMARKS

A. Amendment to the Specification and Abstract

Pursuant to current guidelines, amendment to the specification is made by presenting a replacement paragraph marked up to show changes made relative to the immediate prior version. In the present amendment, replacement paragraph [0013] is presented marked up to show changes from paragraph [0013] of the substitute specification approved and entered as noted in the current Office Action.

Objection to the Specification

The specification, on page 5, line 11, was objected to in the Office Action because "course" should read --course--.

The amendment to paragraph [0013] is responsive to this objection. The word "course" has been changed to --course--.

B. Amendments to the Claims

Pursuant to current guidelines, a complete listing all claims presented in the application is provided above, with current claim status, and the text of all claims currently pending in the application. Currently amended claims include revision markings to show changes as revised from the immediately prior version thereof.

Claim Rejections under 35 USC § 102

Claims 10-15, 21-29, 35 and 39-42 were rejected under 35 U.S.C. § 102(b) as being anticipated by Chiovitti, U.S. Patent 5,337,965.

Claim Rejections under 35 USC § 103

Claims 16-20, 30-34, 36-38 and 43-44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiovitti.

Request for Reconsideration.

The Examiner is respectfully requested to reconsider rejection of the claims pending in the application for the following reasons.

Chiovitti Does Not Anticipate Claims 10-15, 21-29, 35 and 39-42 In The Application.

Chiovitti relates to the separation of the asphalt and aggregate constituents from shredded asphalt roofing material, and to the separate recovery of the aggregate and the asphalt particles from which the aggregate has been disengaged.

Chiovitti discloses a batch process (FIGS. 1-5) to obtain (i) "asphalt and fiber particles 20" (col. 6, line 30) and (ii) "aggregate ... separate from the recovered asphalt and fiber particles" (col. 6, lines 46-50). Disengagement of aggregate from the asphalt particles is accomplished in a liquid slurry in component separator 24, removal of the asphalt particles from the slurry is achieved with collector 38, and recovery of the aggregate from the slurry is accomplished with screen 42.

Chiovitti also discloses a continuous process (FIGS. 6-7) to obtain (i) "[a]sphalt-fiber particles, from which the aggregate has been separated" (col. 7, lines 1-2), and (ii) "cleaned, separated ... aggregate" (col. 7, line 26). Disengagement of aggregate from the asphalt particles is accomplished in a liquid slurry in component separators 124, and separation of the disengaged aggregate and asphalt particles is achieved in a flotation device 62. The asphalt particles exit the flotation device via pump 68, are dewatered at filter press 74, and collected in container 76. The aggregate exits the flotation device via pump 90, is processed through a screen 94 to remove the unwanted fiber and loose fragments (detritus), and the fiber-free aggregate is dewatered at belt filter 102 and collected in container 108.

In contrast to Chiovitti, one aspect of the present invention recited in the claims relates to separating shredded asphalt roofing material into fine material having an asphalt-aggregate composition, and coarse shredded material. The fine material designated in the claims, as well as throughout the specification, is a mixture of both aggregate and shredded pieces of the asphalt shingle material. In the embodiment shown in the drawings, separation of the shredded asphalt is accomplished at filtering apparatus 40 (FIG. 1) through which smaller sized asphalt pieces and loose aggregate fall to comprise the fine material, and over which the larger pieces of shredded asphalt pass to comprise the coarse material (see, e.g., Substitute Specification, ¶ 0043). Thus, designation of the fine material in the claims is "fine material having an asphalt-aggregate composition".

For clarification of the aggregate-asphalt composition of the fine material, independent claims 10, 24, 35 and 42 have been amended to read, in pertinent part, "fine material having an asphalt-aggregate composition comprising both asphalt pieces and aggregate". Independent claim 44 has been amended to read, in pertinent part, "fine material having an asphalt-aggregate composition comprising aggregate and asphalt pieces with a maximum size ...". Independent claim 43 has not been similarly amended because claim 43, as previously presented, recites an asphalt-aggregate ratio that requires both aggregate and shredded asphalt constituents.

Chiovitti does not teach, disclose or suggest, in combination with the additional elements of the claims, separating shredded asphalt roofing material into, or providing separating apparatus configured to obtain from the shredded roofing material (i) fine material having an asphalt-aggregate composition, and (ii) coarse material, as recited in all pending claims as originally presented, and as now clarified in amended claims 10, 24, 35, 42 and 44 with the asphalt-aggregate composition comprising both asphalt pieces and aggregate. Nor can Chiovitti

be reasonably combined with prior art of record, or with that which would have been obvious to one of ordinary skill in the art, for such separating of the shredded asphalt roofing material in combination with the additional elements of the claims. The clear purpose of Chiovitti is the separate recovery of the asphalt and aggregate constituents from shredded asphalt roofing material. No inference can be drawn from Chiovitti regarding separation of the shredded asphalt material other than as to the complete separation and separate recovery of the asphalt and aggregate constituents. Consequently, Chiovitti is lacking an important element of the claims in the application, and therefore does not anticipate or render obvious claims 10-15, 21-29, 35 and 39-42 and those claims depending therefrom.

Chiovitti Screen 94 Does Not Separate Shredded Material As Recited In The Claims.

Rejection of the claims in the present application is based, in part, on Chiovitti disclosing "means 94 for separating the shredded material into fine and course material" (Office Action, page 2, paragraph following paragraph numbered 4, lines 3-4). Chiovitti discloses screen 94 which is understood to separate fine and course materials. However, the fine material from the screen 94 of the Chiovitti process is not the fine material recited in the claims pending in the application.

Chiovitti screen 94 receives waterborne aggregate from flotation device 62. This waterborne aggregate may contain unwanted free fiber and detritus. The screen 94 separates the waterborne aggregate from the free fiber and detritus. The free fiber and detritus are then delivered from the screen to outlet 96, and the "aggregate and water, with such free fibers and detritus removed" are delivered to belt filter 102 (via hopper 98 and pump 100) after which the recovered, "cleaned, separated and dewatered aggregate" is received into container 108 (col. 7,

lines 21-29). Thus, the fine material resulting from operation of the screen 94 is entirely waterborne aggregate.

In contrast, the fine material designated in the claims of the present application is a fine material having an asphalt-aggregate composition, comprising both asphalt pieces and aggregate. This fine material is quite different, and useable for entirely different purposes and products, than the fine material of entirely aggregate resulting from Chiovitti screen 94.

Therefore, identification of screen 94 in Chiovitti as "means 94 for separating the shredded material into fine and course material" does not provide proper anticipatory foundation for rejection of the claims. Nor does Chiovitti provide motivation for identification of the screen 94 for separation of the shredded asphalt material into course material and fine material having an asphalt-aggregate composition as provided for in the claims. Nor can the Chiovitti screen 94 be combined with prior art of record or with that which would have been obvious to one of ordinary skill in the art for such purposes. Chiovitti makes clear that the presence of free fiber and detritus in the waterborne aggregate is an unwanted condition, and screen 94 is specifically provided to eliminate this unwanted condition. No inference can be drawn from Chiovitti regarding separation of the shredded asphalt material with screen 94 other than for the complete separation of the aggregate from the unwanted free fiber and detritus, and recovery of the cleaned aggregate. Therefore, identification of the screen 94 in the Chiovitti process does not anticipate or render obvious separating the shredded material into a course material and a fine material having an asphalt-aggregate composition comprising both asphalt pieces and aggregate as presented in the claims.

The Chiovitti screen 94 could only be interpreted as separating shredded material into course material, and fine material having an "asphalt-aggregate composition" by either assuming

the screen does not perform its intended function, or allowing either the asphalt or aggregate constituent of the fine material composition to go to zero. The first interpretation would render the Chiovitti process inoperative as regards to a clear purpose of recovering cleaned aggregate. The second interpretation would be contrary to the plain-language meaning of "an asphalt-aggregate composition," and such interpretation is not supported by or warranted in view of the disclosure in the application which provides that the fine material includes both asphalt and aggregate. Nevertheless, and as noted above, the claims in the application now clarify that the asphalt-aggregate composition includes both asphalt and aggregate constituents.

Chiovitti Separators 124 Do Not Separate Shredded Material As Recited In The Claims.

In further support of the rejection, the Office Action includes the statement that "Chiovitti further has a means 124 or 64 for filtering material between the shredder and the means for separating the material" (Office Action, page 2, paragraph following paragraph numbered 4, lines 5-7). However, this is not an accurate statement. The component separators 124 do not filter the shredded material. Rather, the component separators 124 cause the aggregate to dislodge from the asphalt particles, and then provides a slurry with both the disengaged aggregate and the asphalt particles to the flotation device 62 via pump 60. Consequently, the component separators 124 do not provide for separation of shredded asphalt into fine material with an asphalt-aggregate mixture and course material as is designated in the claims.

Chiovitti Device 62 Does Not Separate The Shredded Material As Recited In The Claims.

Nor does the flotation device 62 in Chiovitti separate shredded asphalt into fine material having an asphalt-aggregate composition, and course material.

The flotation device 62 receives the slurry of asphalt particles and aggregate from component separators 124, and then separates and forwards (i) the "[a]sphalt-fiber particles, from

which the aggregate has been separated" to pump 68 (Chiovitti, col. 7, lines 1-2), and (ii) the waterborne aggregate to hopper 88. Separation of the asphalt particles from the aggregate in the flotation device 62 is not a size-dependent operation, and Chiovitti is not concerned with relative sizes of the asphalt particles and the aggregate. Instead, separation of the asphalt and aggregate constituents in the slurry is accomplished by utilizing the difference in the flotation characteristics of the asphalt particles and the aggregate, and is therefore based on relative densities of the constituents to be separated. The asphalt and fiber particles float to the top in the flotation device, and the aggregate drops to the bottom of the device (see e.g., Chiovitti, col. 6, lines 28-40). To assist in flotation of the asphalt and fiber particles, Chiovitti provides for blower 64 and reagents from reagents tank 66 into the flotation device 62. (Chiovitti, col. 6, lines 66-68; see also, col. 6, lines 25-40). To the extent the flotation device 62 acts as a "filter," it does so based on relative flotation characteristics, not on relative size of the "filtered" constituents.

The only discussion regarding size in Chiovitti relates to (i) the asphalt material particles 20 that enter the process "are of small size, preferably not in excess of one-half inch" (col. 5, lines 67-68), and (ii) the recovered aggregate "is substantially undiminished in size" (col. 6, lines 46-47). This discussion does not teach or suggest, nor can any reasonable inference be drawn, regarding the relative size of the waterborne asphalt particles directed along one path from the flotation device 62 and the waterborne aggregate directed along a different path from the flotation device. In fact, relative size of the asphalt and aggregate constituents does not matter for proper operation of the Chiovitti process because non-aggregate content in the waterborne aggregate is separated from the aggregate by the screen 94. Consequently, the flotation device 62 does not separate the shredded asphalt material into fine material with an asphalt-aggregate

mixture and course material as provided for in the claims, and therefore does not provide foundation for rejection of the claims.

Chiovitti Does Not Provide For Establishing A Target Asphalt-Aggregate Ratio.

Claims 11-15 and 24-29 recite "establishing a target asphalt-aggregate ratio" and either "setting the ratio of fine material to course material resulting from the separating step" (claims 11-13), "adding aggregate to the fine material" (claim 14), "setting the first maximum size of the shredded material" (claim 15), or "controlling the asphalt-aggregate ratio in the fine material" (claims 24-29) towards obtaining the target asphalt-aggregate ratio in the fine material.

Chiovitti does not teach, suggest, or provide motivation for establishing a target asphalt-aggregate ratio in the fine material as recited in claims 11-15 and 24-29. Nor does the Office Action point to a location in Chiovitti where such teaching, suggestion or motivation is located, or provide a single justification or reason for rejecting claims 11-15 and 24-29 on such basis. This element is simply not found in Chiovitti, and rejection of claims 11-15 and 24-29 as anticipated by Chiovitti is therefore further not warranted.

The only target asphalt-aggregate relationship that is reasonably inferred from Chiovitti is a target zero percentage asphalt in the collected aggregate, and a target zero percentage aggregate in the collected asphalt particles. However, as noted above, such a "ratio" is contrary to the plain meaning of the phrase "asphalt-aggregate ratio" as recited in the claims, and is explicitly contrary to its meaning as presented in the amended claims.

Moreover, Chiovitti does not teach, suggest, or provide motivation for obtaining such a ratio by either "setting the ratio of fine material to course material resulting from the separating step" as recited in claims 11-13, "adding aggregate to the fine material" as recited in claim 14, "setting the first maximum size of the shredded material" as recited in claim 15, or "controlling

the asphalt-aggregate ratio in the fine material" as recited in claims 24-29, towards obtaining the target asphalt-aggregate ratio in the fine material. Nor does the Office Action point to a location in Chiovitti where such teaching, suggestion or motivation is located, or provide a single justification or reason for rejecting claims 11-15 and 24-29 on such basis. These elements are also not found in Chiovitti, and rejection of claims 11-15 and 24-29 as anticipated by Chiovitti is therefore further not warranted.

Chiovitti Does Not Provide For Establishing A Target Ratio Of Fine To Course Material.

Claims 21-24 and 35-41 recite "establishing a target ratio of fine material to course material" and either "setting the first maximum size of shredded material" (claim 21), adjusting the fall-through rate of a screen element (claims 22-23), or "controlling the ratio of fine material to course material resulting from said separating step" (claims 35-41) towards obtaining said target ratio.

Chiovitti does not teach, suggest, or provide motivation for establishing or obtaining a target ratio of fine material to course material as recited in claims 21-24 and 35-41. Nor does the Office Action point to a location in Chiovitti where such teaching, suggestion or motivation is located, or provide a single justification or reason for rejecting claims 21-24 and 35-41 on such basis. These elements are not found in Chiovitti, and rejection of claims 21-24 and 35-41 as anticipated by Chiovitti is therefore further not warranted.

Chiovitti Does Not Provide Motivation For Establishing Ratios And Sizes Recited.

Claims 16-20, 30-34, 36-38, 43 and 44 provide for either fine material with an asphalt-aggregate ratio of between approximately 30% to 70% by volume (claims 16, 30, 43), fine material with an asphalt-aggregate ratio of approximately 50-50 by weight (claims 17, 31, 43), fine material with a maximum size of between one-half (1/2) inch to one and one-half (1 1/2)

inches (claims 18, 32, 36, 44), shredded material of a first maximum size of between approximately one (1) inch to four (4) inches (claims 19-20, 33-34, 37-38, 43, 44), or shredded material of a first maximum size of between approximately two (2) inches to three (3) inches (claims 20, 34, 38).

All of these claims were rejected in the Office Action, under 103(a) for obviousness, on the basis that, although Chiovitti does not disclose the recited ratios and sizes, "it would have been obvious to one of ordinary skill in the art to modify the material of Chiovitti to have such claimed ranges since it has been held that discovering an optimum or workable ranges (sic) involve only routine skill in the art."

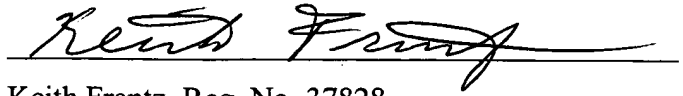
However, as discussed fully in the specification, such ratios and sizes result in the new and unexpected ability to obtain from shredded asphalt shingle material the designated fine and course materials suitable for producing different finished products. In addition, nothing in Chiovitti or the other prior art of record would suggest or motivate an artisan to formulate a process of experimentation to obtain the recited ratios and sizes in an effort to optimize or find workable ranges for such ratios and sizes, because neither Chiovitti nor the other prior art of record demonstrates or suggests the desirability for such an endeavor. Quite to the contrary, Chiovitti teaches against undertaking such an endeavor. Instead, Chiovitti teaches that the shredded material is "preferably not in excess of one-half inch" (col. 5, lines 67-68), that asphalt content in the waterborne aggregate exiting the flotation device 62 is unwanted and undesirable, that the collected aggregate includes zero asphalt content, and that the collected asphalt includes no aggregate content. Such teachings are contrary and fundamentally different than the teachings of the present invention. Consequently, the cited justification from *In re Aller* in the Office

Action is not applicable to the subject claims as presented, and 103 rejection of these claims is not properly supported or warranted.

In summary, Chiovitti does not teach, suggest, or provide motivation for separating shredded asphalt roofing material into course material, and fine material having an asphalt-aggregate composition comprising both asphalt pieces and aggregate, or establishing target asphalt-aggregate ratios or target fine to course material ratios and taking steps to obtain such ratios as presented in the various claims with the additional elements recited therein. Nor does Chiovitti suggest the desirability of determining optimum or workable ranges for such ratios and sizes as specified in certain claims. To the contrary, Chiovitti either does not consider or teaches away from the above-noted elements of the claims in the present application. Accordingly, Applicant believes the claims as currently presented patentably distinguish over Chiovitti and are in a condition for allowance, and respectfully requests reconsideration and withdrawal of the rejection of the claims in the application.

If the Examiner, after considering this application in light of the present amendment and arguments presented, feels that a response to the amendment should be another final rejection of the application, and if he feels that a discussion with applicant's attorney might serve as a means of avoiding such a rejection and advancing the prosecution of this application to a favorable termination, he is respectfully requested to phone the undersigned attorney and to accord said attorney an opportunity of discussing this application before same is disposed of by a final rejection. The Examiner is assured of complete cooperation in the event that such courtesy is extended.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Keith Frantz", is written over a horizontal line.

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Serial No. **09/838,045**
Filing Date: **04/18/2001**